FIG.1

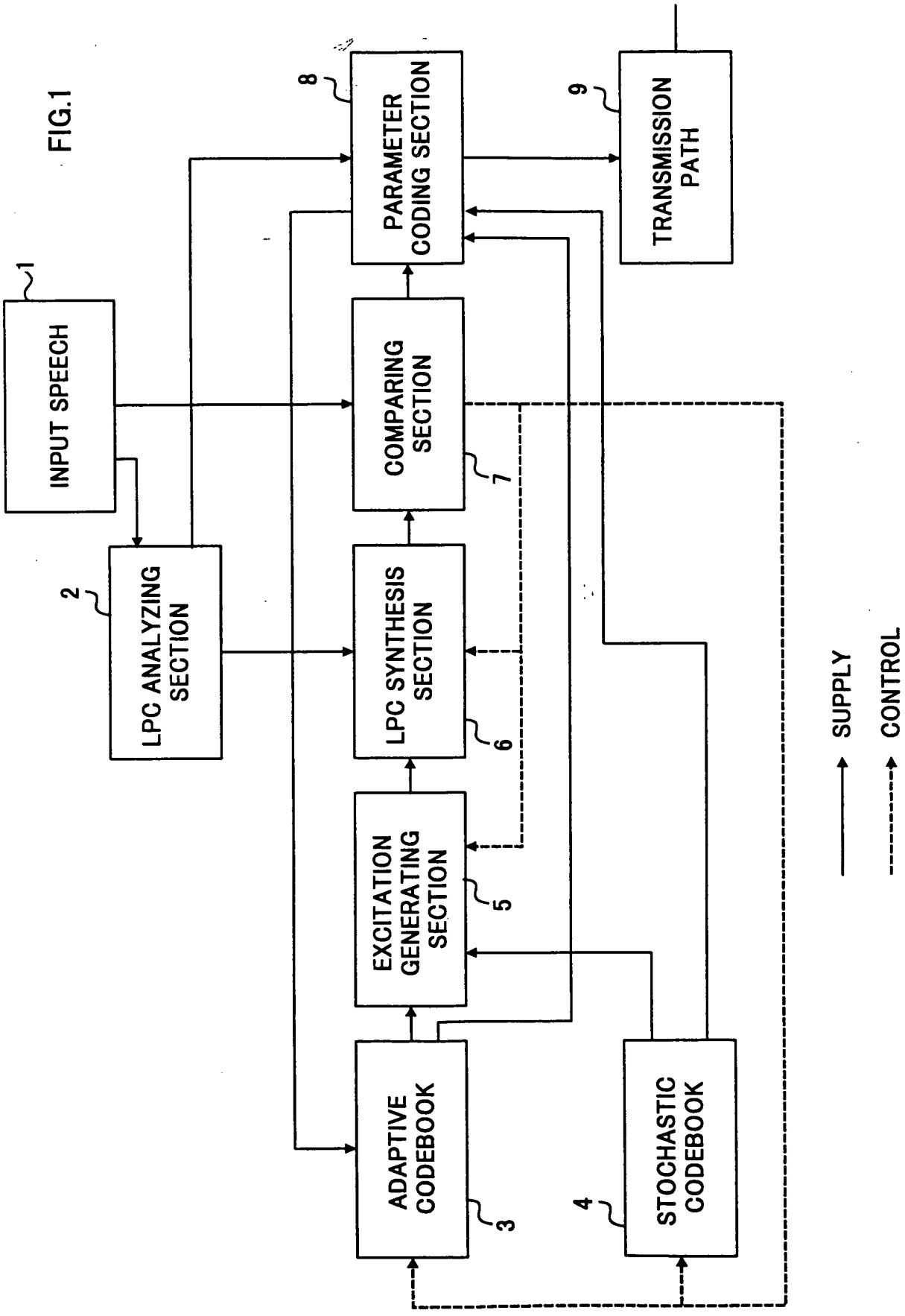

INPUT SPEECH
1
LPC ANALYZING SECTION
2
ADAPTIVE CODEBOOK
3
STOCHASTIC CODEBOOK
4
EXCITATION GENERATING SECTION
5
LPC SYNTHESIS SECTION
6
COMPARING SECTION
7
PARAMETER CODING SECTION
8
TRANSMISSION PATH
9
SUPPLY
CONTROL

FIG.2

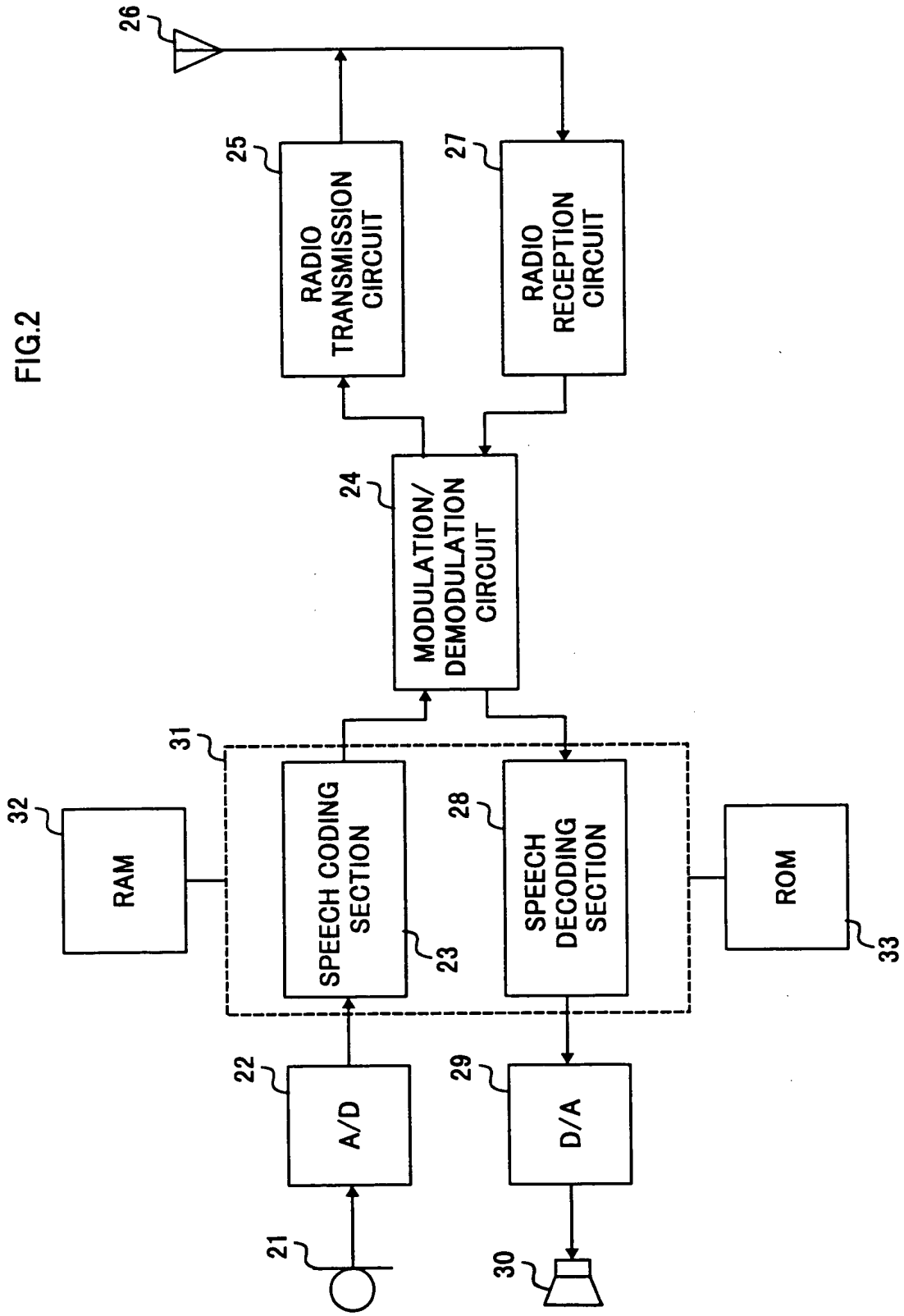

26
25
RADIO TRANSMISSION CIRCUIT
27
RADIO RECEPTION CIRCUIT
24
MODULATION/ DEMODULATION CIRCUIT
31
32
RAM
SPEECH CODING SECTION
23
28
SPEECH DECODING SECTION
ROM
33
22
A/D
29
D/A
21
30

FIG.3

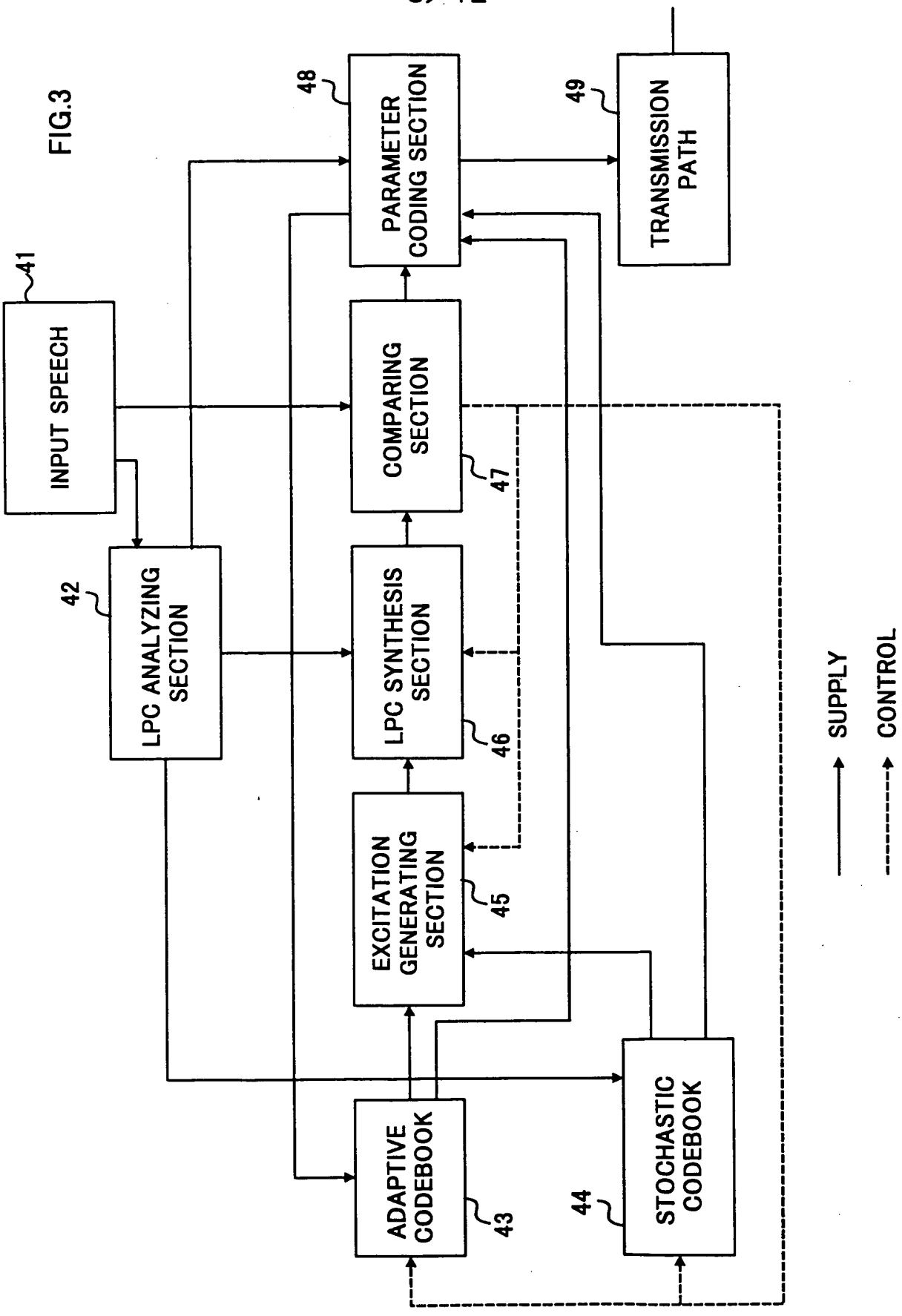

41
INPUT SPEECH
42
LPC ANALYZING SECTION
43
ADAPTIVE CODEBOOK
44
STOCHASTIC CODEBOOK
45
EXCITATION GENERATING SECTION
46
LPC SYNTHESIS SECTION
47
COMPARING SECTION
48
PARAMETER CODING SECTION
49
TRANSMISSION PATH
SUPPLY
CONTROL

FIG.4

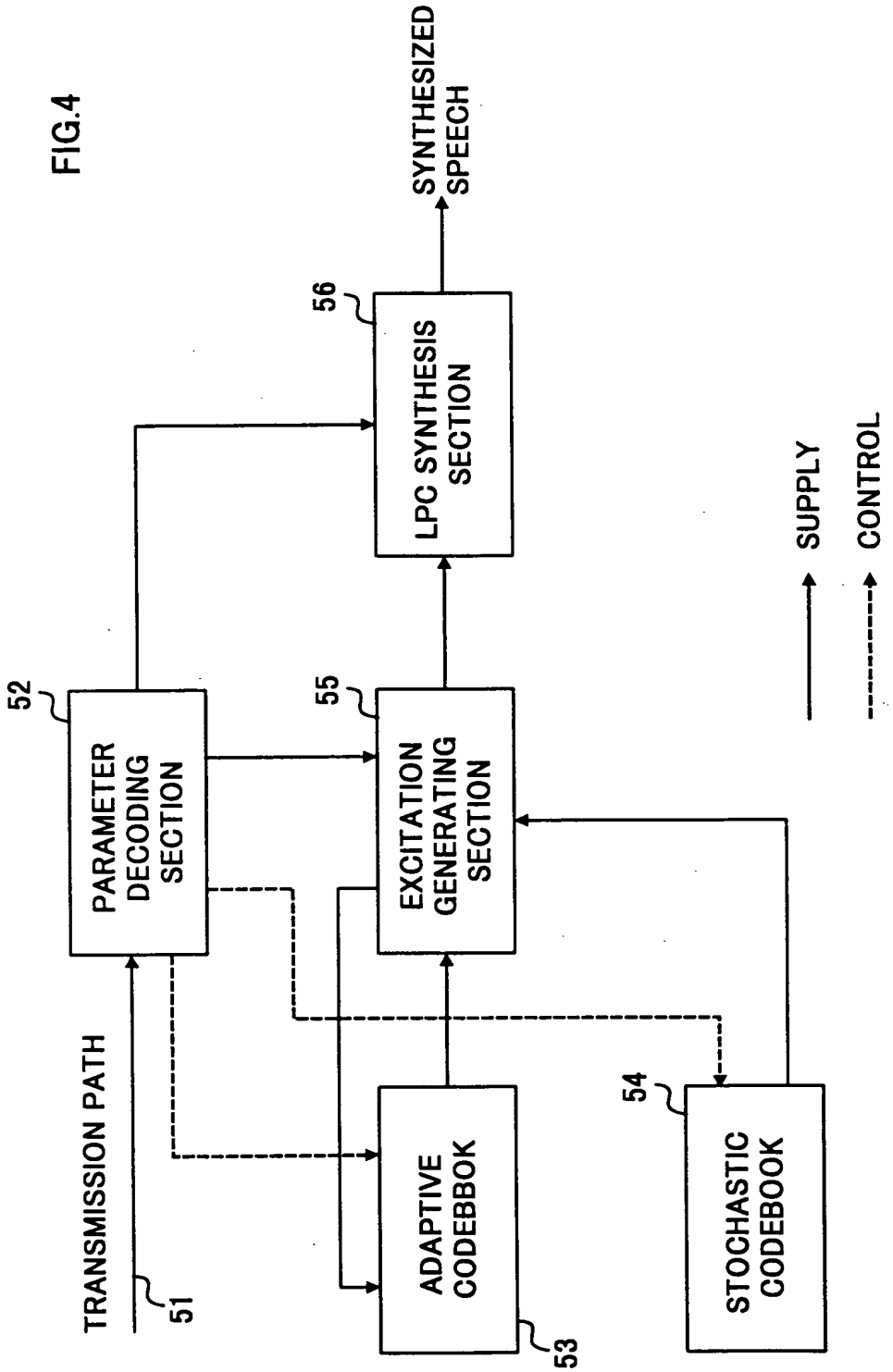
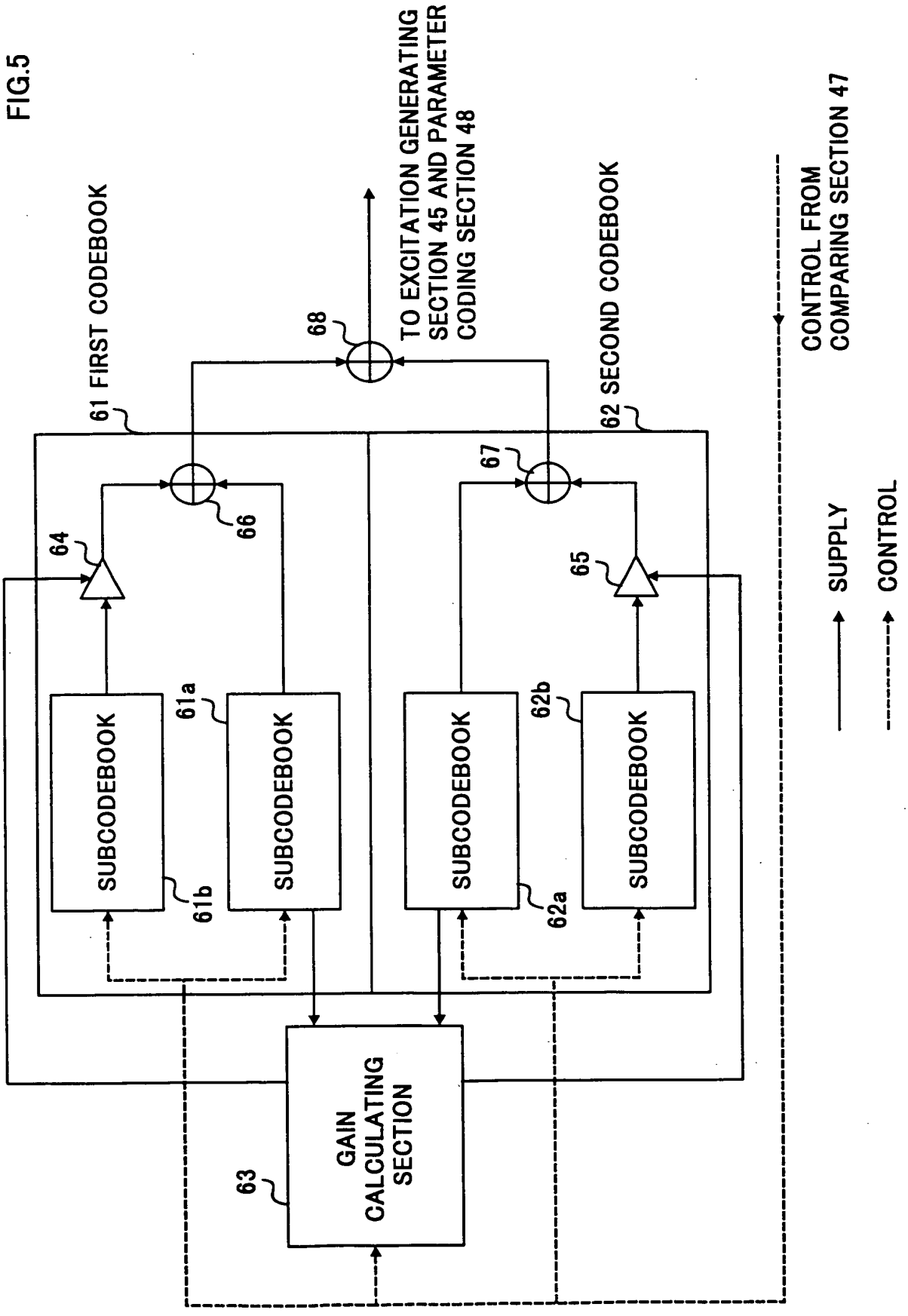

SYNTHESIZED SPEECH
56
LPC SYNTHESIS SECTION
52
PARAMETER DECODING SECTION
55
EXCITATION GENERATING SECTION
TRANSMISSION PATH
51
ADAPTIVE CODEBBOK
53
54
STOCHASTIC CODEBOOK
SUPPLY
CONTROL

FIG.5


61 FIRST CODEBOOK
62 SECOND CODEBOOK
TO EXCITATION GENERATING SECTION 45 AND PARAMETER CODING SECTION 48
CONTROL FROM COMPARING SECTION 47
SUPPLY
CONTROL
SUBCODEBOOK
61a
61b
62a
62b
64
65
66
67
68
GAIN CALCULATING SECTION
63

DOCUMENT EDITED

FIG. 6A

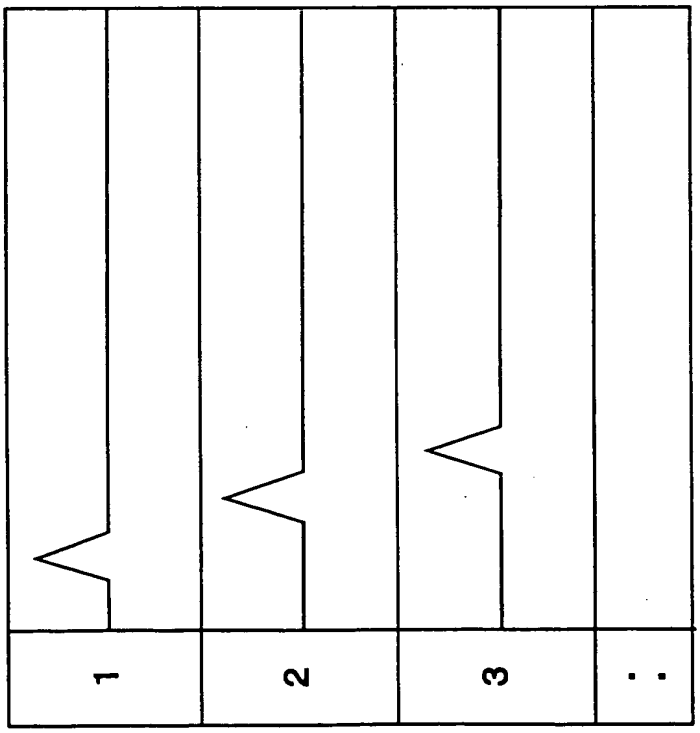
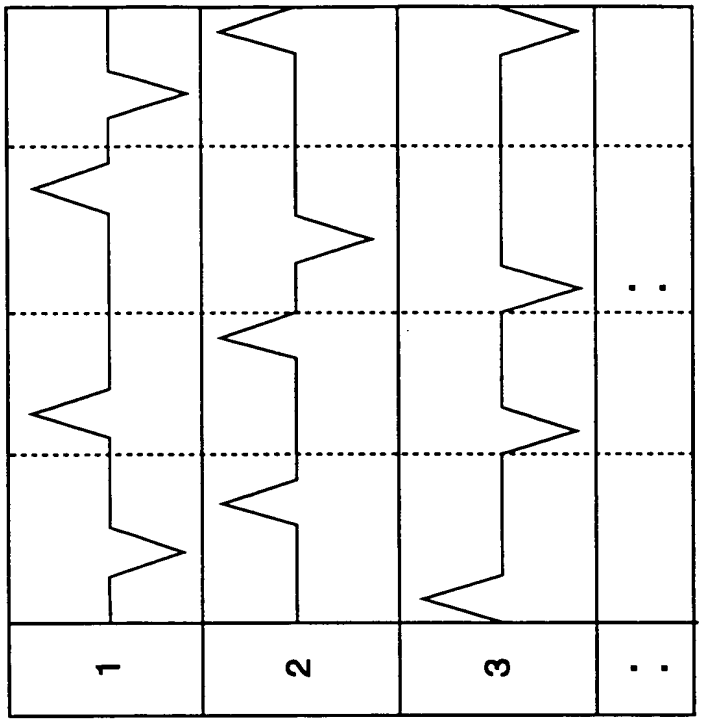



FIG. 6B



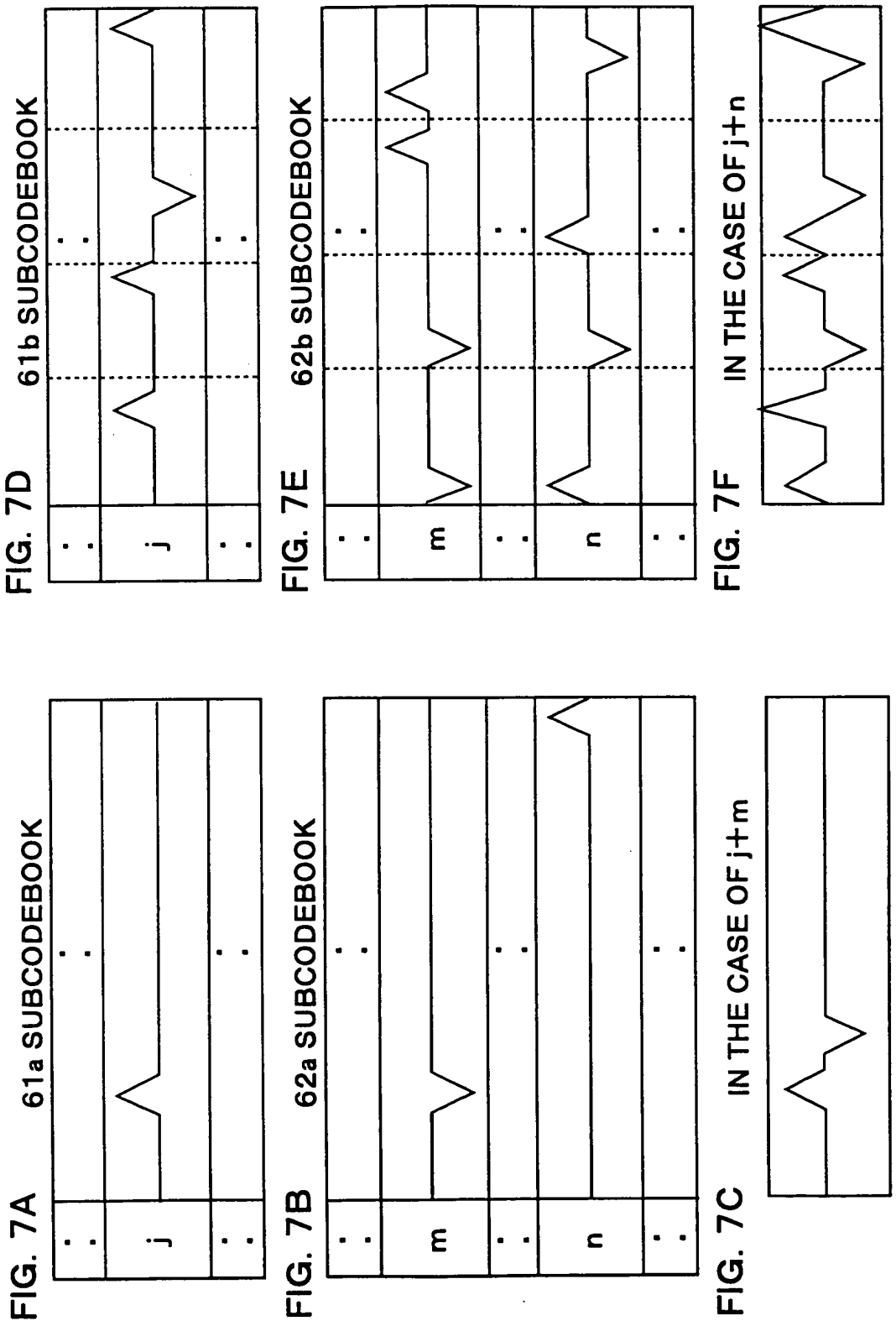



FIG. 7A

FIG. 7B

FIG. 7C

FIG. 7D

FIG. 7E

FIG. 7F

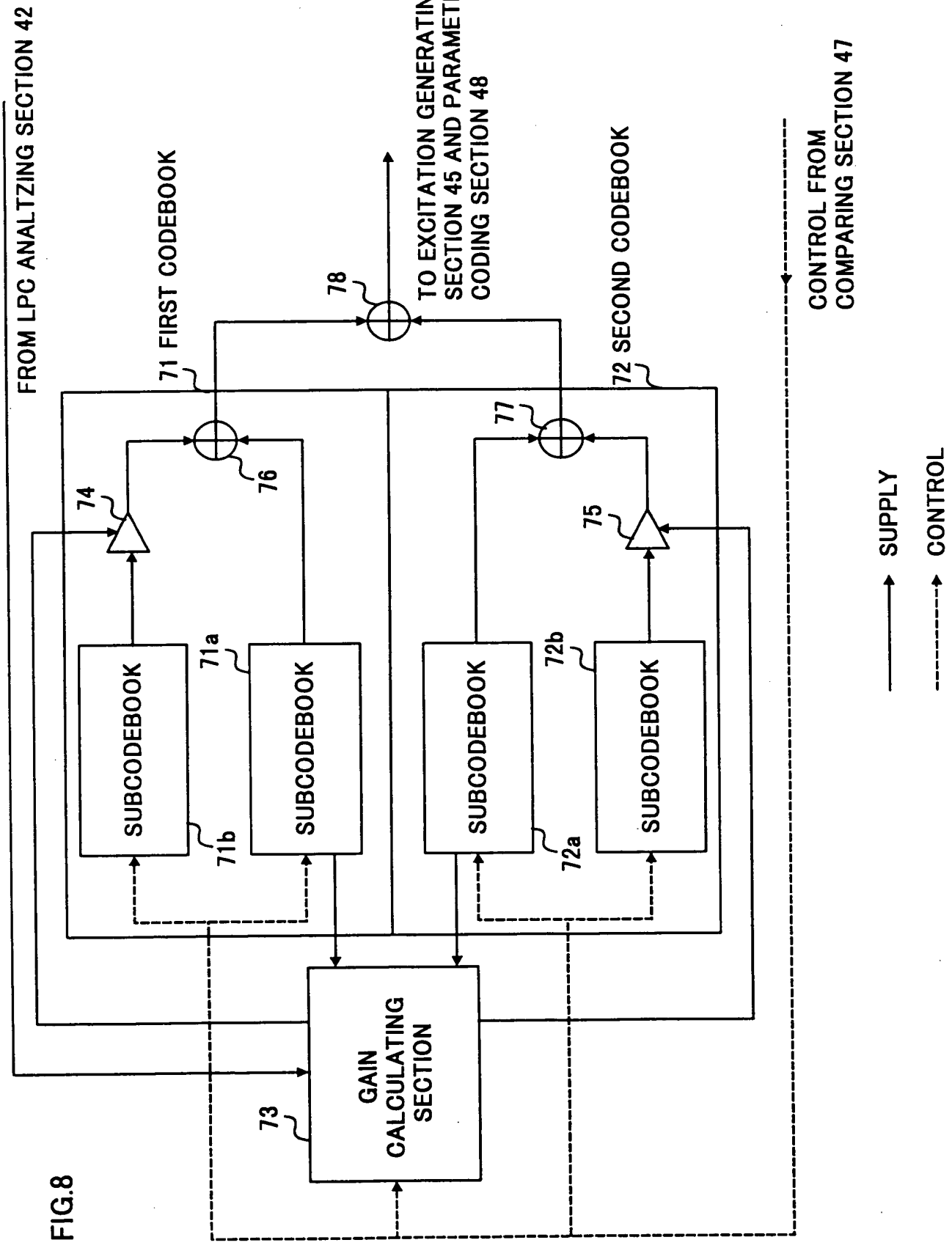

FROM LPC ANALTZING SECTION 42
71 FIRST CODEBOOK
78
TO EXCITATION GENERATING SECTION 45 AND PARAMETER CODING SECTION 48
72 SECOND CODEBOOK
CONTROL FROM COMPARING SECTION 47
74
76
77
75
SUBCODEBOOK
71a
71b
SUBCODEBOOK
SUBCODEBOOK
72b
72a
SUBCODEBOOK
GAIN CALCULATING SECTION
73
SUPPLY
CONTROL

FIG.8

FIG.9

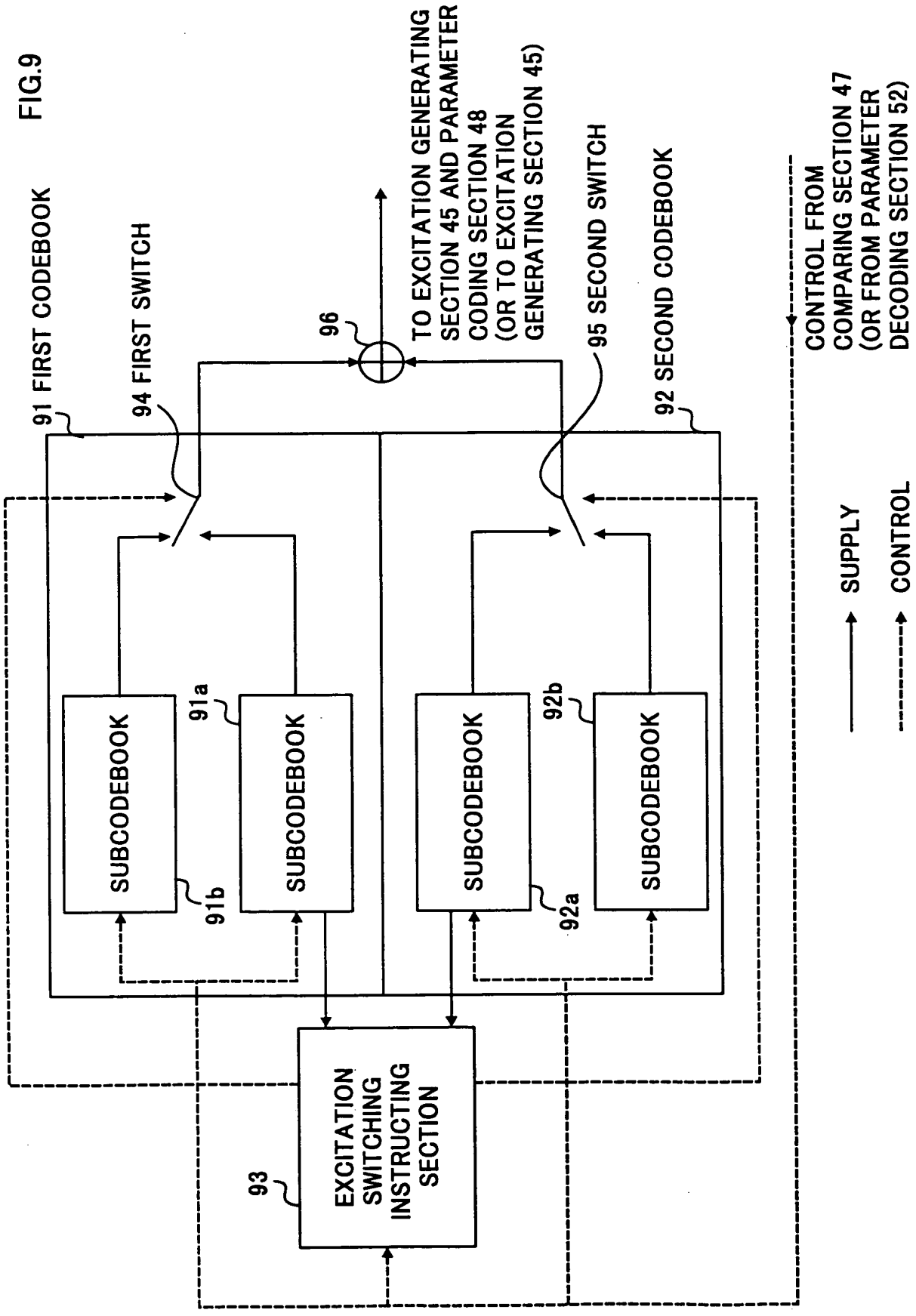

91 FIRST CODEBOOK
94 FIRST SWITCH
96
TO EXCITATION GENERATING SECTION 45 AND PARAMETER CODING SECTION 48 (OR TO EXCITATION GENERATING SECTION 45)
95 SECOND SWITCH
92 SECOND CODEBOOK
CONTROL FROM COMPARING SECTION 47 (OR FROM PARAMETER DECODING SECTION 52)
SUPPLY
CONTROL
SUBCODEBOOK
91a
91b
SUBCODEBOOK
SUBCODEBOOK
92b
92a
SUBCODEBOOK
EXCITATION SWITCHING INSTRUCTING SECTION
93

FIG. 10A

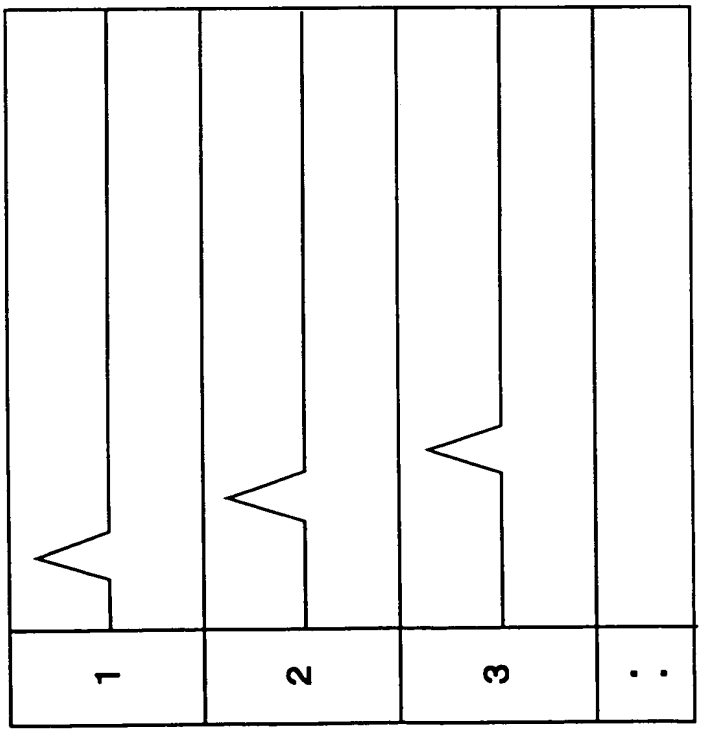
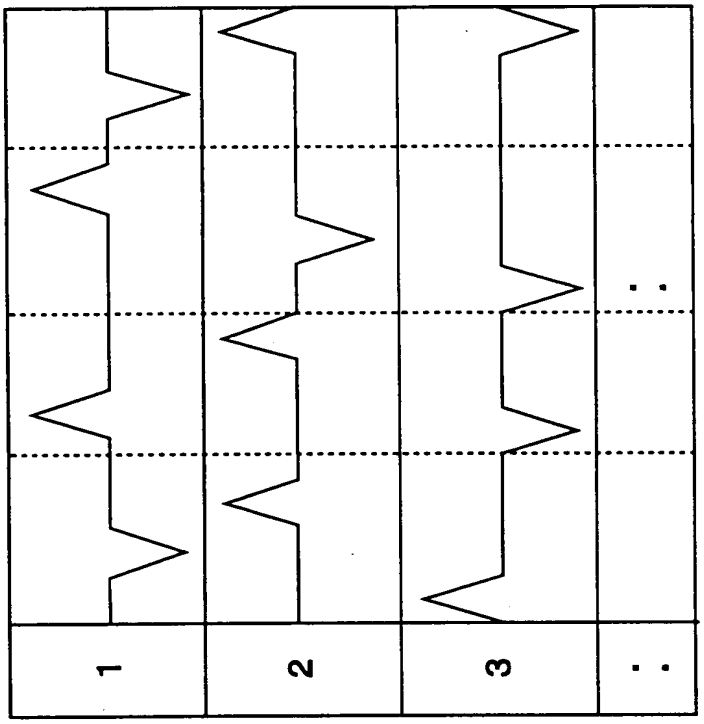



FIG. 10B



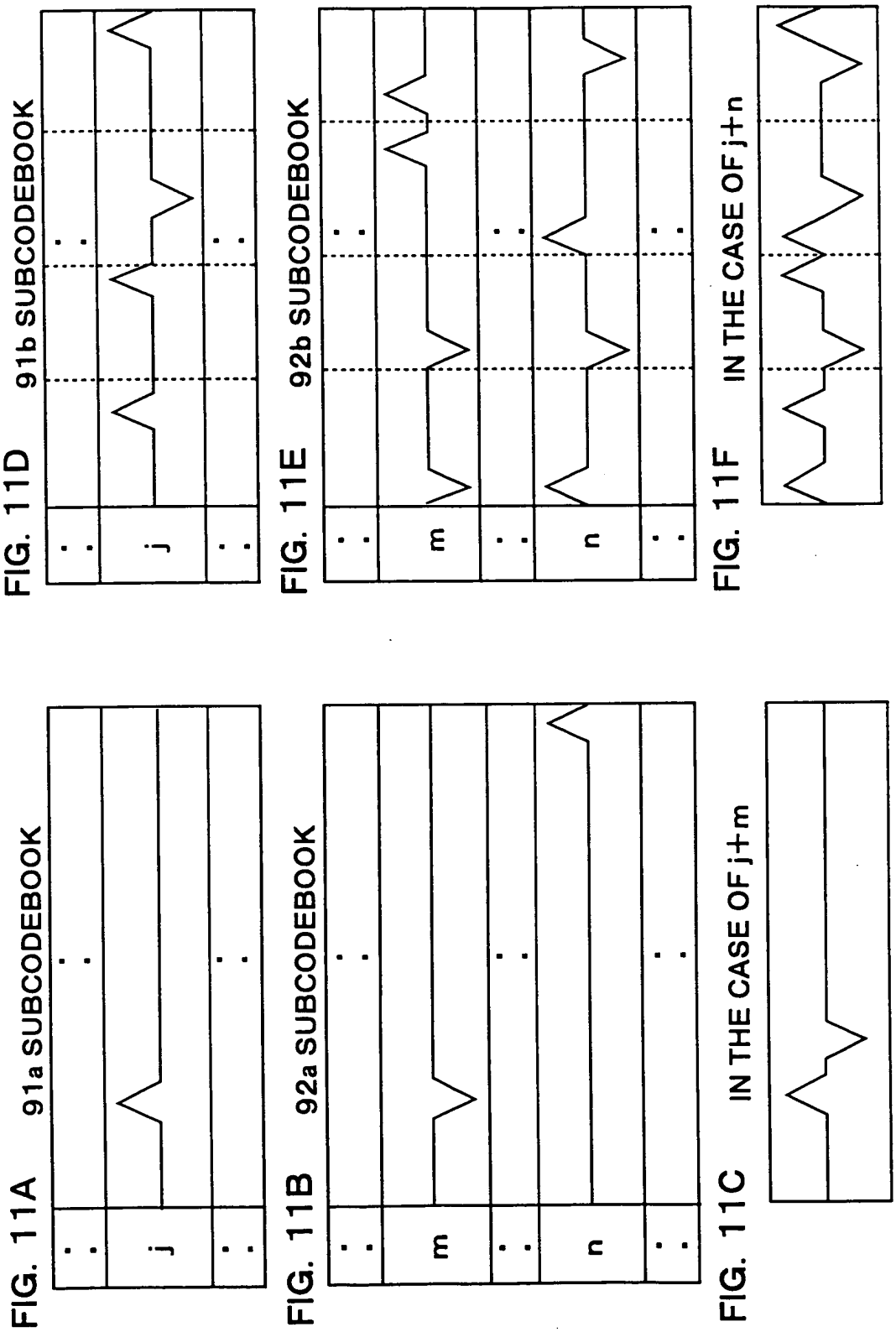



FIG. 11A

FIG. 11B

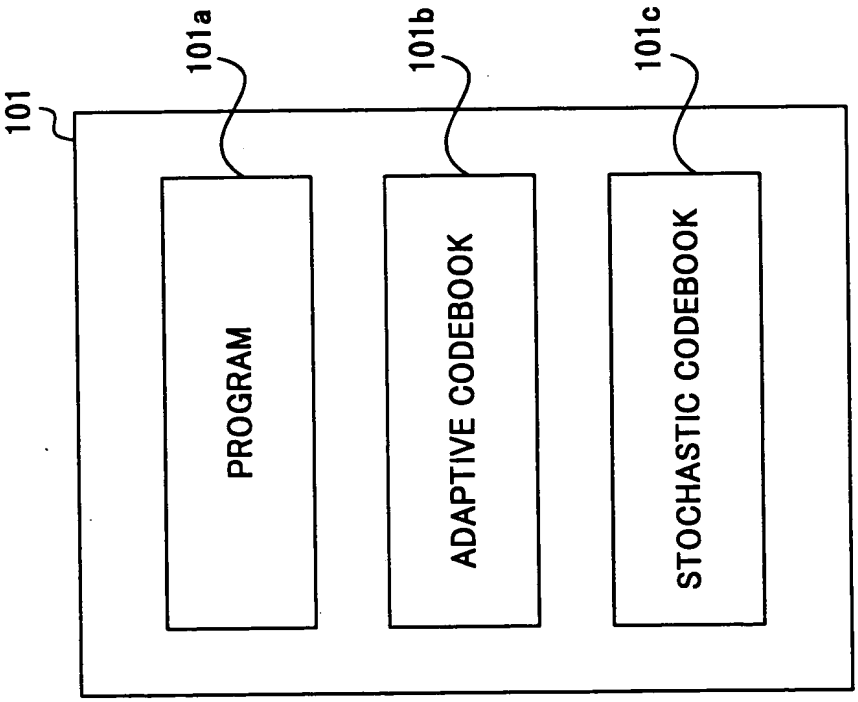
FIG. 11C IN THE CASE OF j+m

FIG. 11D

FIG. 11E

FIG. 11F IN THE CASE OF j+n

FIG.12


101
101a
101b
101c
PROGRAM
ADAPTIVE CODEBOOK
STOCHASTIC CODEBOOK